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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/598,027	08/16/2006	Ronen Basri	7040-N06-065US	9350

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EXAMINER

TUCKER, WESLEY J

ART UNIT	PAPER NUMBER
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2624

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10/27/2011

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/598,027	Applicant(s) BASRI ET AL.	
	Examiner WESLEY TUCKER	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 5) ☒ Claim(s) 1-62 is/are pending in the application.
- 5a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 6) ☒ Claim(s) 39-62 is/are allowed.
- 7) ☒ Claim(s) 1-38 is/are rejected.
- 8) ☐ Claim(s) ____ is/are objected to.
- 9) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☒ The drawing(s) filed on 16 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>8/16/06, 2/27/09</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-38 are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent Publication 2004/0013305 to Brandt et al.

Regarding claim 1, Brandt teaches, a method for clustering data comprising the steps of

- a. constructing a graph of a database in which each node of the graph represents a component part of the database and every two nodes represent neighboring component parts associated by an arc representing a coupling value (Paragraph 28, Lines t-6),
- b. selecting chosen component parts as blocks with unselected neighboring component parts coupled with a selected block according to coupling values (Paragraph 178, Lines 5-9),
- c. coarsening the graph by performing iterated weighted -aggregation wherein at each iteration of the coarsening blocks are selected and coupling values updated

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between unselected blocks to form larger blocks to obtain hierarchical decomposition of the database and to form a pyramid structure (Paragraph 178, Lines 9-12),

d. adjusting the coupling between blocks (Paragraph 178, Lines 12-17)

e. detecting saliency of segments in the pyramidal structure (Paragraph 178, Lines 17-18),

f. determining which component parts belong to a segment by computing recursively a degree of attachment of every component part to each of the blocks in the pyramid (Paragraph 75, Lines 7-12), and

g. scanning the pyramid from coarse to fines starting at the level a segment is detected and applying relaxation sweeps to sharpen the boundaries of a segment (Paragraph 75, Lines 12-8).

Brandt teaches limitation of claim 2, a method for processing an image comprising the steps of

a. constructing a graph of an image in which each node of the graph represents a pixel of the image, and every two nodes represent neighboring pixels associated by an arc representing a coupling value (Paragraph 28, Lines 1-6),

b. selecting chosen pixels as blocks with unselected neighboring pixels coupled with a selected block according to coupling values (Paragraph 178, Lines 5-9), c. coarsening the graph by performing iterated weighted aggregation wherein at each iteration of the coarsening blocks are selected and coupling values updated between unselected blocks to form larger blocks to obtain hierarchical decomposition of the database and to form a pyramid structure (Paragraph 178, Lines 9-12),

d. adjusting the coupling between blocks (Paragraph 178, Lines 12~17), e. detecting saliency of segments in the pyramidal structure (Paragraph 178, Lines 17-18),

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f. determining which pixels belong to a segment by computing recursively a degree of attachment of every pixel to each of the blocks in the pyramid (Paragraph 75, Lines 7-12), and

g. scanning the pyramid from coarse to fine starting at the level a segment is detected and applying relaxation sweeps to sharpen the boundaries of a segment (Paragraph 75, Lines 12-8);

Brandt teaches limitation of claim 3, a method for processing an image comprising the steps of

a. constructing a graph of an image in which each node of the graph represents a pixel of the image, even/edge connects a pair of neighboring pixels and a weight is associated with each edge reflecting contrast in the corresponding location in the image (Paragraph 108, Lines 1-7),

b. selecting some pixels as blocks and associating unselected neighboring pixels with a selected block to form aggregates (Paragraph 178, Lines 5-9),

c. detecting segments by a recursive coarsening using weighted aggregation which induces a pyramid structure over the image, the segments detected appearing as an aggregate at some level in the pyramid (Paragraph 108, Lines 7-11),

d. said recursive coarsening comprising iterated weighted aggregation wherein at each iteration of the coarsening blocks are selected and weights are updated between unselected blocks to form larger blocks to obtain hierarchical decomposition of the image into aggregates (Paragraph 72 through 74), e. determining salient segments from among the segments detected in the pyramidal structure (Paragraph 75, Lines 1-4), and

f. sharpening the segments to determine its boundaries more accurately (Paragraph 75, Lines 12-15).

Brandt teaches limitation of claim 4, the method including the further step of determining which pixels belong to a segment by computing recursively a degree of attachment of every pixel to each of the blocks in the pyramid (Paragraph 75, Lines 6-8).

Brandt teaches limitation of claim 5, the method including the further step of scanning the pyramid from coarse to fine starting at the level a segment is detected and applying relaxation sweeps to sharpen the boundaries of a segment (Paragraph 75, Lines 12-16).

Brandt teaches limitation of claim 6, the method including the further step of computing at least one property of the aggregate it represents during recursive coarsening for every block in a new level of the pyramid (Paragraph 103, Lines 16-18);

Brandt teaches limitation of claim 7, the method including the further step of updating weights to account for properties computed during recursive coarsening for every edge in the graph (Paragraph 128, Lines 14-15).

Brandt teaches limitation of claim 8, the method including the further step of updating weights during cursive coarsening to increase weights between neighboring aggregates exhibiting sharp sections that connect by a smooch curve (Paragraph 155).

Brandt teaches limitation of claim 9, the method including the further step of applying a top-down sharpening during the recursive coarsening at any given level by first going down a preselected number of levels to check the boundaries of detected

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segments, updating weights, and rebuilding the pyramid to the originating level to sharpen distinction between aggregates before building the pyramid to the next upper level (Paragraph 159, Lines 1-6).

Brandt teaches limitation of claim 10, the method including the further step of going back down a preselected number of levels to check sub-aggregates regarding boundaries, update and rebuild the pyramid before proceeding to the next upper level as part of each iteration of weight aggregation (Paragraph 159, Lines 6-10).

Brandt teaches limitation of claim 11, the method including the further step of detecting sharp transitions in pixels in the image (Paragraph 164, Lines 18-21).

Brandt teaches limitation of claim 12, the method including the further step of establishing a threshold to determine edge pixels in the image (Paragraph 165, Lines 1-5).

Brandt teaches limitation of claim 13, the method including the further step of applying edge tracing by best fitting line segments of aggregates to determined edge pixels (Paragraph 165, lines 5-8).

Brandt teaches limitation of claim 14, the method including the further step of producing a polygonal approximation of an aggregates boundary (Paragraph 165, Lines 8-9).

Brandt teaches limitation of claim 15, the method including the further" step of comparing the properties of neighboring aggregates (Paragraph 129, Lines 13-15).

Brand teaches limitation of claim 16, the method including the further step of modifying weights to control intensity contrast between aggregates during recursive coarsening (Paragraph 139, Lines 3-5).

Brand teaches limitation of claim 17, the method including the further step or determining variance of a n aggregate relative to a neighboring aggregate (Paragraph 129, Lines 13-15).

Brandt teaches limitation of claim 18, the method according including the further step of determining multi-scale variance of an aggregate to detect its texture (Paragraph 143, Lines 1-2).

Brand teaches limitation of claim 19, the method including the further step of determining average variance at finer scales to determine a relationship between aggregates (Paragraph 143, Lines 5-6).

Brandt teaches limitation of apparatus claims 20-38, corresponding to method claims 1-19 above (Paragraph 179).

Allowable Subject Matter

Claims 39-62 are allowed.

The following is an examiner's statement of reasons for allowance:

The closest found prior art USPN 5,784,431 to Kalend et al. does not teach or fairly suggest subjecting two images to segmentation by weighted aggregation of claim 39, 40, 43 and 45 and assigning a weight to each pair of neighboring pixels according to a normalized correlation between their motion profiles of claims 47, 48, 55 and 56 in combination with the additional limitations of the claims. No other found prior art of record teaches or fairly suggests the combination of claimed features in these independent claims.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to WESLEY TUCKER whose telephone number is (571)272-7427. The examiner can normally be reached on 9am-5pm Monday through Friday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vikkram Bali can be reached on (571)272-7415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Wes Tucker/
Primary Examiner, Art Unit 2624